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Title of Thesis: **"DIFFERENCES IN HYPNOTIC CAPACITY: PATIENTS
REFERRED TO A PSYCHIATRIC CONSULTATION
LIAISON CLINIC VS. PATIENTS REFERRED TO A
PSYCHIATRIC OUTPATIENT CLINIC**

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ABSTRACT

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Differences in Hypnotic Capacity:
Patients Referred to a Psychiatric Consultation
Liaison Clinic
vs.
Patients Referred to a Psychiatric Outpatient Clinic

Kelly M. Wollman, Master of Science, 1993

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The present study determined the differences in hypnotic capacity, as measured by the Hypnotic Induction Profile (HIP), between patients referred to a psychiatric consultation liaison service (PCLS) and patients referred to a psychiatric outpatient clinic (POC). Two HIP scales were used to insure comprehensive results: The HIP Profile Score and the HIP Induction Score. Both the mean profile score and the mean induction score of the HIP were significantly higher for the PCLS patients than the respective scores of the POC patients. The authors discuss the implications of these findings in relation to diagnosis and treatment.

DIFFERENCES IN HYPNOTIC CAPACITY:
PATIENTS REFERRED TO A PSYCHIATRIC CONSULTATION LIAISON
CLINIC
VS.
PATIENTS REFERRED TO A PSYCHIATRIC OUTPATIENT CLINIC

by

Kelly M. Wollman

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INTRODUCTION

The efficacy of hypnosis for intervention with medical conditions and the clinical relevance of hypnotic capacity have been prominent in the literature (Brown and Fromm, 1987; Wadden and Anderton, 1982; Fromm and Nash; Wain, 1993). Medical conditions that have been studied include pain (Wain, 1980, 1986, 1992), asthma (Smith, Wain and Evans, 1981), gastrointestinal (GI) disorders (Klein and Spiegel, 1989), skin disorders (Surman, Gottlieb, Hackett and Silverberg (1973), and the use of hypnosis with medical/surgical patients (Wain, 1993).

Research also suggests that hypnotic capacity may be related to psychopathology (Spiegel, 1982; Pettinati, Kogan, Evans, Wade, Horne and Staats, 1990). The more psychopathology patients exhibit, in terms of poor concentration, inability to focus attention, and thought disorganization, the more likely they will have a diagnosis such as schizophrenia or dementia. Also, the more psychopathology patients exhibit, the more they will exhibit regressed defenses and less adaptive functioning. They are consequently less able to use their hypnotic capacity to the maximum (Spiegel, 1982).

Therefore, it would seem that patients who present with primarily medical/surgical problems (neither psychotic or demented), who have been referred for consultation on psychiatric/psychological sequelae of medical diseases, typically will not exhibit the intensity of psychopathology

as those referred to an outpatient psychiatric clinic. It could also be expected that patients referred to a psychiatric consultation liaison service (PCLS) would exhibit a higher level of hypnotic capacity than patients referred to a psychiatric outpatient clinic (POC), and a greater ability to use this capacity to benefit more rapidly from hypnotic intervention.

Though previous studies have revealed positive results with hypnotic intervention, earlier studies (Spiegel, 1982; Pettinati, 1982; Spiegel, Hunt, Dondershine, 1988; Pettinati, Kogan, Evans, Wade, Horne and Staats, 1990) have not reported differences in hypnotic capacity between these two populations. The purpose of this study is therefore to determine the differences in hypnotic capacity, as measured by the Hypnotic Induction Profile (HIP), between PCLS and POC patients, and to discuss the implications of these findings.

MEDICAL HYPNOSIS: REVIEW OF THE LITERATURE

Hypnosis, in particular, has been beneficial in the treatment of pain, and successful treatment outcome has been related to hypnotic capacity (also referred to as susceptibility or hypnotizability) (Brown and Fromm, 1987; Wadden and Anderton, 1982). Cedercreutz (1978) treated migraine patients using hypnosis and reported that 72% of high susceptibility patients were symptom free, the remaining 28% were judged to be improved, and 99% of those with low susceptibility showed no treatment effect. Hypnotic capacity

was rated on a 4-point scale. Cedercreutz, Lahteenmaki and Tulikoura (1976) found similar results in their work with head-injured patients who had headache and/or vertigo. Using the same screening scale, treatment effect was significantly correlated with hypnotizability for both headache and vertigo.

When comparing migraine headache treatments, Andreychuk and Skriver (1975) found no significant effects between treatment groups, however, highly susceptible subjects, as measured by the HIP (Spiegel, 1973), attained better results than those of low susceptibility. Van Dyck, Zitman, Linssen and Spinhoven (1991) found headache pain and medication use to be significantly reduced for those patients using hypnosis compared to autogenic training. Hypnotic capacity, as measured by the Stanford Hypnotic Clinical Scale (SHCS) (Morgan and Hilgard, 1978-1979a), was significantly correlated with pain reduction.

Gottfredson (1973) reported that 75% of highly susceptible subjects, as measured by the Stanford Hypnotic Susceptibility Scale (SHSC) (Weitzenhoffer and Hilgard, 1962), were able to complete dental work with hypnosis alone, compared to 38% of low susceptible patients who needed chemical anesthesia as well. Wakeman and Kaplan (1978) found a significant reduction in the use of pain medication for burn patients using hypnosis and medication compared to those using medication alone. Shafer (1975) found similar results with the use of hypnosis in a burn unit.

Research with asthma patients indicates that hypnosis has been effective in its treatment, with level of hypnotizability positively related to treatment outcome (Brown and Fromm, 1987; Wadden and Anderton, 1982; Fromm and Nash, 1992). Maher-Loughnan, MacDonald, Mason and Fry (1962) found that hypnosis patients showed significant posttreatment effects for asthmatic symptoms (e.g., decreased wheezing and medication use) compared to control subjects. A positive correlation was reported between trance depth and treatment outcome, with hypnotizability measured on a 3-point scale. Collison (1975) retrospectively analyzed data on 121 asthmatic patients and found that 67% of patients capable of deep hypnosis were in remission or had improved, whereas only 6% of light hypnosis patients were improved. Wain, Smith and Evans (1981) found that hypnotic capacity, as measured by the HIP, was directly related to patient's capacity to alter the responsivity to PFT.

Ewer and Stewart (1991) found that high hypnotizable asthmatic subjects, as measured by the SHCS, showed significant changes in pulmonary functioning when using hypnosis. High hypnotizable subjects in the hypnosis group showed significant reductions in the subjective evaluation of symptoms (e.g., wheezing inhibition of activity and medication use) relative to low hypnotizable and no-treatment control subjects. Murphy, Lehrer, Karlin, Swartzman, Hochron and McCann (1989) studied asthmatics using a nonhypnotic behavioral intervention and found that a significant

objective decrease in bronchial hyperactivity was correlated with hypnotizability.

It has been noted for some time that hypnosis has been effective in the treatment of warts. Sinclair-Gieben and Chalmers (1959) treated patients with bilateral warts using suggestions that the warts would disappear, but only on one side of the body. Full remission was found for 90% of those subjects with high hypnotic capacity, as measured on a 3-point scale, with no change for those of low capacity. Surman, Gottlieb, Hackett and Silverberg (1973) replicated this study and found that 53% of patients with bilateral warts improved in the hypnosis group compared to none in the control group. Asher (1956) found that of those patients who were capable of deep hypnosis, 65% had a total remission of their warts, 24% improved, and 12% were unchanged. Similarly, Ullman and Dudek (1960) found full remission in 53% of those capable of deep hypnosis, and only 2% in those with relatively no susceptibility.

More recent studies suggest that the subjective effects associated with certain skin disorders are significantly related to hypnotizability. These studies have examined the severity of itching accompanying chronic urticaria (Shertzer and Lookingbill, 1987), with hypnotizability measured by the Barber Creative Imagination Scale (T.X. Barber and Wilson, 1978), and the pain associated with atopic eczema (H'ajek, Jakoubek and Radil, 1990).

Hypnosis has been shown to be an effective adjunct in facilitating postoperative recovery (Blankfield, 1991; Fromm and Nash, 1992). Evans and Richardson (1988) found that patients who listened to a prerecorded audiotape of hypnosis intraoperatively had a significantly shorter hospital stay, as well as less pyrexia and GI problems compared to a control group. In a similar intraoperative audiotape design, Bonke, Schmitz, Verhage and Zwaveling (1986) found a significantly shorter hospital stay for older patients (over 55) in the hypnosis group compared to controls. Egbert, Battit, Welch and Bartlett (1964), using both preoperative and postoperative suggestions by the anesthetist versus a normal pre/postoperative routine, found length of hospital stay, postoperative narcotic use, and reported subjective pain to be significantly less for the hypnosis group.

Studies concerning hypnosis and GI disorders indicate that hypnotherapy can be effective in the treatment of certain types of GI disorders (e.g., irritable bowel syndrome, duodenal ulcers and gastric acid secretion) (Fromm & Nash, 1992). Whorwell, Prior & Faragher (1984) found that subjects with irritable bowel syndrome who received training in self-hypnosis reported significantly better improvement for abdominal pain, abdominal distention, abnormality of bowel habits, and general well-being.

HYPNOTIC INDUCTION PROFILE

The nature of hypnosis has been explored by many

researchers (Weitzenhoffer, 1959), and it has also been suggested that the clinical entity is ahead of basic research. An understanding of the nature of hypnosis is less precise than are some of the impressive clinical results. In an attempt to predict hypnotic responsivity, many scales have been developed in the past to test for hypnotic susceptibility (capacity) and the depth of hypnosis (White, 1930; David and Husband, 1931; Barry, MacKinnon and Murray, 1931). Hull (1933), though not developing a scale, spoke of eye closure as a means of measuring susceptibility. In 1938, Friedlander and Sarbin developed a scale by making modifications in the eye closure in the Barry, MacKinnon and Murray scale. Other scales were developed by Eysenck and Furneaux (1945), LaCrone and Bordeaux (1947) and Watkins (1949). In 1959, The Stanford Scales were developed by Weitzenhoffer and Hilgard, and shortly thereafter the Harvard Scale of Hypnotic Susceptibility was developed by Shor and Orne (1962).

Many of these scales, however, though capable of having some success in the prediction of susceptibility, had an academic flavor and were developed in an experimental laboratory. Spiegel (1973) developed the Hypnotic Induction Profile, a scale in a clinical setting which lends itself to rapid use in a busy clinical practice. The use of this profile allows the clinician to measure the hypnotic capacity of the patient within five minutes on a rating scale from 0 to 4. Wain (1986) used a modification of the HIP routinely in assessing virtually all new patients referred for possible

use of hypnotic intervention.

The HIP has been shown to be an effective adjunct diagnostic tool in helping formulate differential diagnoses and therapeutic strategies (Spiegel H. & Shainess, 1972; Spiegel H., 1973; Spiegel, H. & Spiegel, D., 1978; Frankel, 1974; Spiegel, D., 1991; Wain, (1986, 1992, 1993). Wain (1974, 1976, 1986) used the results of the profile in screening patients at a pain clinic for treatment, as well as for medical and psychiatric patients. Frankel (1974) found that hypnosis and the HIP were useful in devising specific psychotherapeutic strategies for short-term psychotherapy and crisis intervention in patients with rapid onset of ego dystonic symptoms. D. Spiegel (1991) and Wain, 1991, 1992) used the HIP as a screening tool in formulating treatment strategies for a variety of medical and psychiatric conditions.

METHOD

Subjects

This investigation included 100 volunteer subjects. Group 1 consisted of 50 patients (m=21, f=29; mean age=35.9 yrs) referred to the PCLS at Walter Reed Army Medical Center (WRAMC). These patients were referred for consultation on psychiatric/psychological sequelae of medical diseases, and were asked to participate in the study if they were not evaluated as psychotic, suffering from dementia, excessively agitated or severely depressed.

Group 2 consisted of 50 patients (m=22, f=28; mean age=38 yrs) referred to the POC at WRAMC (Wain, Sandman, Radcliffe and Rothberg, 1992). These patients were referred for consultation on psychiatric/psychological problems, and were asked to participate in the study if they were not evaluated as psychotic, suffering from dementia, excessively agitated or severely depressed.

Procedure

PCLS and POC patients who were not initially evaluated as psychotic, suffering from dementia, excessively agitated or severely depressed, were asked to participate in a research study by being administered the HIP. Informed consent explaining the use of the HIP was given to each patient. The consent also asked for the patient's involvement in the study and indicated that their treatment at WRAMC would not otherwise change depending on their participation.

The HIP was given in conjunction with an overall clinical evaluation. After completion of the clinical evaluation, those patients who participated were then administered the HIP by the senior researcher HJW. Clinical interviewers were various staff people on the PCLS.

Dependent Measure

The Hypnotic Induction Profile (HIP) is a clinically standardized measure of hypnotic capacity (Spiegel, 1973).

Two HIP scales were used in this study to insure comprehensive results: The HIP Profile Score and The HIP Induction Score. Both scales are detailed below.

The modified HIP Profile Score is a 4-point scale, that is administered individually to the patient by a trained clinician (Wain, 1986). The profile score consists of two major components from which other scores are derived. A rapid hypnotic induction that includes instructions to look upward and then roll the eyes (eye roll), is followed by a suggestion to raise an arm (arm levitation) and then by a procedure for leaving the trance.

The eye roll measure (ER), the first major component, is the amount of sclera visible between the cornea and lower eyelid as the patient closes his eyelids. The ER is a relatively constant measure and does not appear to be greatly affected by practice. The ER seems to tap into basic physiological factors and can be measured on a 4-point scale. The second component, the arm levitation (AL), measures the rapidity with which the arm rises in the posthypnotic state, and is also measured from 0 to 4. The HIP profile score is the mean of the two component scores. A profile score of 0 to 1 indicates no hypnotic capacity, 1 to 2.0 indicates low capacity, 2.1 to 3.2 indicates moderate capacity, and 3.3 to 4 indicates high hypnotic capacity. Systematic research has supported the association between these hypnotic capacity scores and one's potential for hypnotic trance and the ability to experience and maintain it (Spiegel and Spiegel,

1978).

The HIP Induction Score is a 10-point scale composed of the sum of five 2-point items: dissociation, arm levitation, control differential (CD), the cutoff signal (CS), and floating sensation (FS). Dissociation is a postinduction measure (PM) of the relative difference in the degree of connectedness which the subject may feel between the hand and wrist of one arm versus the other. The CD is a PM of the difference in the sense of control between one arm rising versus the other. The CS is a PM of the subject's capacity to end the hypnotic trance, and the FS is a post-trance self-report measure of the amount of bouyancy that the subject remembers experiencing in the trance. These five items are scored according to the subject's verbal report of the degree of experiencing these sensations when questioned by the clinician. More positive scores on these items indicate a greater ability to attentively focus and maintain the trance experience once it has been effected through specific instructions. An induction score of 0 to 6 indicates low hypnotic capacity, 6.25 to 9 indicates medium capacity, and 9.25 to 10 indicates high hypnotic capacity.

The HIP Profile Score compares the level of biological, hypnotic potential (which is apparently tapped by the ER) with the level of utilizable hypnotic capacity (measured by AL). Though the profile score emphasizes more of a biological probability, the HIP Induction Score is a more traditional, quantitative measure of hypnotic capacity

(Spiegel, 1973, pg. 61).

The authors of the HIP have reported that the test-retest and interrater reliabilities for two patient groups were 0.75 and 0.76, respectively (Spiegel, H. & Spiegel, D., 1978; Stern, Spiegel & Nee, 1979).

RESULTS

The mean \pm SD HIP Profile Score for the PCLS patients ($2.63 \pm .7$) was significantly higher than that of the POC patients ($2.21 \pm .8$) ($t=2.83$, $df=98$, $p<.006$). The mean \pm SD HIP Induction Score for the PCLS patients (7.33 ± 2.7) was also significantly higher than that of the POC patients (5.92 ± 2.7) ($t=2.88$, $df=98$, $p<.005$) (see Table 1).

Statistical analyses on demographic data (age, sex, race, marital status) revealed no significant differences between the groups.

Insert Table 1 here

DISCUSSION

The present study determined the differences in hypnotic capacity, as measured by the Hypnotic Induction Profile (HIP), between patients referred to a psychiatric consultation liaison service (PCLS) and patients referred to a psychiatric outpatient clinic (POC). Both the profile score and the induction score of the HIP were significantly

higher for the PCLS patients than the respective scores of the POC patients.

The results suggest that hypnotic capacity may be related on one level to a patient's presentation of symptoms. It may suggest that there is a greater capacity for self-contribution of their presenting symptoms. The data may also suggest on a second level that medical/surgical patients may be more amenable to, and may benefit more rapidly from, hypnotic intervention than psychiatric patients with physical symptoms. This reinforces Wain's (1993) discussion that medical/surgical patients with high hypnotic capacity may have the ability to obtain more rapid resolution than those who have more psychological overlay.

Spiegel (1973) discussed intact and decrement profile patterns concerning HIP scores. Intact profiles indicate more consistency between biological and psychological parameters of hypnotic capacity. Decrement profiles indicate more inconsistency between these two parameters of hypnotic capacity, as well as suggest a greater probability of more psychopathology. POC patients in this study revealed significantly more decrement profiles than PCLS patients, further reinforcing the concept that PCLS patients have a higher hypnotic capacity than POC patients.

The results also support the hypothesis that hypnotic capacity may be related to psychopathology (Spiegel, 1982; Pettinati, Kogan, Evans, Wade, Horne and Staats, 1990). The more psychopathology a patient exhibits, in terms of poor

concentration, inability to focus attention and thought disorganization, the more likely they will have a diagnosis that will disrupt their ability to use their hypnotic capacity to the maximum, or reveal they have always had a diminished capacity (Spiegel, 1982).

Knowing a patient's hypnotic capacity may give the clinician more information about that individual that may be used to effectively diagnose and treat his or her medical/surgical problems. The possibility that many different personality dimensions may underlie hypnotic capacity has stimulated theory and research for many years. Some investigators (Shames and Bowers, 1992) have focused on three interrelated constructs that correlate significantly with hypnotic capacity: absorption, imaginative involvement, and fantasy proneness. This possible association between personality dimensions and hypnotic capacity may provide valuable information to the clinician about the patient's style of presenting symptoms.

The first construct, absorption, can be defined as a predisposition or openness to experience alterations of cognition and emotion over a broad range of situations (Roche and McConkey, 1990). Tellegen (1987) defined absorption as "a disposition, penchant, or readiness to enter states characterized by marked cognitive restructuring" and a "readiness to depart from more everyday life cognitive maps and to restructure...one's representation of one's self and its boundaries."

Becoming so caught up in watching a movie that one loses actual awareness of being in a theater viewing a movie, is an example of this tendency for self-altering and highly focused attention characterized by absorption (Spiegel and Cardena, 1990; Tellegen and Atkinson, 1974), and by imaginative involvement as well. J.R. Hilgard (1970) defined imaginative involvement as an "almost total immersion" in an activity, accompanied by disattention to irrelevant stimuli. Research indicates that more frequent occurrences of absorbing experiences by individuals is associated with higher hypnotic capacity (Tellegen and Atkinson, 1974). Knowing that medical/surgical patients with high hypnotic capacity may present symptoms in a manner that may be influenced by elements of absorption and imaginative involvement (i.e., experiencing alterations of cognition or emotion) is important to the clinician for effective diagnosis and treatment.

The final construct, fantasy proneness (FP), seems to be characterized by deep involvement in a private world of fantasy, vivid daydreams, and seemingly paranormal experiences (Wilson and Barber, 1981, 1983). FP also appears to be intimately related to imaginative involvement and absorption (Lynn and Sivec, 1992). Wilson and Barber (1981) reported that fantasizer's "intense imaginal involvements represent manifestations of adaptive fantasy abilities" at the far end of the continuum of the FP trait.

They also reported that fantasizer's profound

involvement with fantasy allowed them the ability to hallucinate objects and to experience what they fantasized as real (Wilson and Barber, 1981). This sense of "realness" included rich and vivid imagery before sleep, vivid recall of personal experiences, and physical reactions (e.g., anxiety, and nausea) to observed violence on television. Fantasizers also reported psychic and out-of-body experiences, occasional difficulty differentiating real and fantasized events and/or persons, and sensitivity to social norms which often resulted in a secret fantasy life unaware to others.

These three constructs/dimensions of personality which may contribute to hypnotic capacity may allow medical/surgical patients a propensity for altering the perception of their illness. Be it through absorption, imaginative involvement, fantasy proneness, or an interactive effect of these factors, patients may have overexaggerated responses to stimuli, or they may excessively focus on their symptoms. A particular problem that a medical/surgical patient may be experiencing may therefore be a condition based on perceptual alterations. In other words, certain identifiable personality traits related to high hypnotic capacity may be those that in turn affect a patient's presentation of illness. By knowing a patient's hypnotic capacity, and understanding what characteristics this hypnotic capacity may indicate about that patient's psychiatric/psychological condition, diagnosis and treatment may be more effectively determined.

By virtue of these unique personality styles, patients may contribute to their presenting symptoms. Regardless of the etiology of the patient's discomfort, biopsychosocial parameters are involved in the presentation (Wain, 1992).

The presentation of medical conditions, such as pain, gastrointestinal disorders or asthma, refer not only to a physical condition, but may also be based on many psychological variables. These variables, which include patient's levels of anxiety, expectations, attention, meaning of discomfort, secondary gain, various forms of psychopathology, etc., all may contribute to a patient's presentation of illness. Accepting the concept that pain, for instance, is a subjective metaphorical response (Wain, 1980), one can see how psychological variables can affect presenting symptoms.

A higher level of hypnotic capacity may also indicate to the clinician that the patient may be focusing excessively on his/or her symptoms. This excessive focusing is likely to be an intense field of concentration that the clinician may redirect. He may redirect this focal field of concentration onto other focal perspectives to help the patient gain greater control and understanding of the symptoms, and/or achieve the reduction of psychologic dissonance.

This intense concentration manifested by the patient may often exemplify known trance phenomena, including blocking peripheral awareness, suspension of critical judgement, time distortion, and focal concentration of symptoms. These trance characteristics manifested by the

patient can be utilized to alter the patient's perception, which may be the necessary ingredient for effective treatment (Wain, 1980).

Hypnotic capacity may in some cases be related to the presentation of symptoms (Wain, 1993; Spiegel, 1985), and be used to help in diagnosis. Wain (1993) also hypothesizes that one's hypnotic capacity may in other cases be related to the ablation of symptoms, without symptom enhancement. Interestingly, characteristics associated with hypnotic capacity that may contribute to an overexaggeration of stimuli or an excessive focusing of attention on symptoms, may also contribute to a removal or taking away of symptoms.

In attempting to explain this seemingly paradoxical situation, it may be worthwhile to discuss hypnosis as a division of consciousness. Some theorists believe that hypnotic capacity is closely related to dissociative processes (Hilgard, 1977, 1979, 1991, 1992; Fromm, 1979, 1992; Spiegel and Spiegel, 1978) and that individual differences in hypnotic capacity may be the result of stable differences in dissociative capacity or ability. It may be possible that if a patient with high hypnotic capacity is able to exhibit an intense focal field of concentration and alter the perception of his/her illness, perhaps this field of concentration may instead be directed towards dissociating one's symptoms to another level of consciousness.

Dissociation is defined as the splitting off of certain mental processes from the main body of consciousness

with various degrees of autonomy (Hilgard, 1992). According to the neodissociation theory (Hilgard, 1977) concerning hypnosis, information processing involves multiple parallel paths or systems. Dissociation consists of one or more of these systems operating outside of awareness and influencing cognition, affect, or behavior (Kirsch and Council, 1992).

D. Spiegel (1986) defines dissociation from a more clinical viewpoint, as a condition in which specific subsets of material exclude other subsets of material from conscious awareness.

The process of dissociation, often a defense mechanism used by trauma victims, may manifest itself in dramatic alterations in the experience of self and the world; experiences similar to those of hypnosis (Nash, 1992). High hypnotic capacity may allow these patients to dissociate or remove symptoms, because of their ability to separate from awareness certain experiences, motives, and emotions.

Interestingly, high hypnotic capacity is a feature of multiple personality disorder (Bliss, 1983, 1984; Frischholz, 1985), posttraumatic stress disorder (PTSD) (Spiegel, 1992), and conversion disorder (Wain, 1993).

Concerning PTSD, Spiegel (1988) reported that spontaneous dissociation, imagery, and hypnotic capacity are important components of this disorder. The immediate experience of trauma is not uncommonly defended against with dissociative processes that allow trauma victims to distance themselves psychologically from their negative experiences

(Spiegel and Cardena, 1990), and thereby maintain a sense of psychological control. Unfortunately, this often adaptive and effective defense may become a component of longer-term maladaptive reactions, such as PTSD (Spiegel and Cardena, 1990). The lack of integration of these traumatic experiences within the self, while adaptive during the trauma, often produces "uncontrolled fractures and discontinuities in conscious experience" (Spiegel and Cardena, 1990, pg. 39).

Knowledge of hypnotic capacity by a clinician in a situation where a patient has experienced severe trauma and is manifesting dramatic alterations in the experience of self and the world, would be valuable in effective diagnosis and treatment. In evaluation and treatment of PTSD this information could be particularly important since hypnotic phenomena, dissociative processes, and trauma may be closely linked. Hypnotic intervention can be an effective adjunct to treatment by facilitating access to, and the working through of, dissociated traumatic memories. Wain and Jaccard (1993, in press) used hypnotic intervention as a way of preventing, treating, and understanding PTSD symptoms, and other psychological sequelae of trauma, in a medical center.

As was mentioned earlier, it may be important to measure a patient's hypnotic capacity because it may give the clinician important adjunct information about the patient's covert style of responding to illness. It appears, however, that the manner in which a patient with high hypnotic

capacity will manifest symptomatology is probably a combination of many factors pertaining to that individual's psychiatric/psychological makeup. Wain's (1993) hypothesis that one's hypnotic capacity may in some cases be related to the presentation of symptoms, and in others, the ablation of symptoms, can be viewed when hypnosis is used for diagnostic purposes (Wain, 1993), as well as for sole anesthesia in major surgery (Wain, 1992). Lastly, though some patients with high hypnotic capacity may contribute to their presenting symptoms, while others with such capacity may not, it appears that hypnotic intervention may have an impact on both of these groups (Wain, 1993).

CONCLUSIONS

In this study PCLS patients exhibited a higher level of hypnotic capacity than did POC patients, and appear to have a greater ability to use this capacity to benefit more rapidly from hypnotic intervention. This seems consistent with Wain's (1979, 1986, 1993) previous reports indicating that patients with high hypnotic capacity respond more rapidly to hypnotic intervention. Patients with medical/surgical problems perhaps exhibit more of the talent (Hilgard, 1960), and gift (Wain, 1983) to use hypnotic intervention. It also appears that knowledge of a patient's hypnotic capacity can give the clinician crucial information which may be used to expedite diagnosis and treatment for PCLS patients, as well as for medical/surgical patients in

general.

Though this study measured hypnotic capacity, Wain (1979, 1981, 1992, 1993) points out that the strategy used by the clinician may expedite treatment or enhance one's hypnotic capacity. Therefore, patients presenting at either clinic (PCLS or POC), with high hypnotic capacity, may show enhancement of their symptoms and be able to more expeditiously resolve their problems. Though patients will present at both clinics with a variety of different complaints, the knowledge that one has high hypnotic capacity is information the clinician may strategically integrate into an efficacious diagnostic and treatment plan for both PCLS and POC patients.

Based on these results there is no suggestion regarding success of intervention; however, given the nature of previous studies (see earlier section on review of medical hypnosis) which suggest positive outcomes, one would predict that PCLS patients would be more amenable to hypnosis. Future studies should investigate the differences in treatment outcome between PCLS and POC patients, measuring variables such as length of hospital stay, amount of time spent with the clinician, and potential cost efficiency, which may be found with patients exhibiting higher hypnotic capacity.

Table 1

Independent samples t-test on HIP Profile Scores

Group	N	Mean	SD
PCLS	50	2.625	0.704
POC	50	2.205	0.777

Pooled variances $t = 2.832$ $df = 98$ $p < .006$

Independent samples t-test on HIP Induction Scores

Group	N	Mean	SD
PCLS	50	7.330	2.161
POC	50	5.920	2.711

Pooled variances $t = 2.876$ $df = 98$ $p < .005$

REFERENCES

- Andreychuk, T., & Skriver, C. (1975). Hypnosis and biofeedback in the treatment of migraine headaches. *International Journal of Clinical and Experimental Hypnosis*, 23, 172-183.
- Asher, R. (1956). Respectable hypnosis. *British Medical Journal*, February 11, 309-313.
- Barber, T.X. & Wilson, S.C. (1978). The Barber Suggestibility Scale and the Creative Imagination Scale: Experimental and clinical applications. *American Journal of Clinical Hypnosis*, 21, 84-108.
- Barry H., Mackinnon, N.W., & Murray, H.A., Jr. (1931). Studies on personality: Hypnotizability as a personality trait and its typological relations. *Human Biology*, 13, 1-36.
- Blankfield, R.P. (1991). Suggestion, relaxation, and hypnosis as adjuncts in the care of surgery patients: A review of the literature. *American Journal of Clinical Hypnosis*, 33, 172-187.
- Bliss, E.L. (1984). Spontaneous self-hypnosis in multiple personality disorder. *Psychiatric Clinics of North America*, 7, 135-148.
- Bliss, E.L., (1983). Multiple personality disorders, related disorders and hypnosis. *American Journal of Clinical Hypnosis*, 26, 114-123.
- Bonke, B., Schmitz, P.I.M., Verhage, F., & Zwaveling, A. (1986). Clinical study of so-called unconscious perception during general anaesthesia. *British Journal of Anaesthesia*, 58, 957-964.
- Brown, D.P., & Fromm, E. (1987). *Hypnosis and behavioral medicine*. Hillsdale, New Jersey: Erlbaum.
- Cedercreutz, C. (1978). Hypnotic treatment of 100 cases of migraine. In F.H. Frankel & H.S. Zamansky (Eds.), *Hypnosis at its bicentennial*. New York: Plenum Press.
- Cedercreutz, C., Lähteenmäki, R., & Tulikoura, J. (1976). Hypnotic treatment of headache and vertigo in skull injured patients. *International Journal of Clinical and Experimental Hypnosis*, 24, 195-201.

- Collison, D.A. (1975). Which asthmatic patients should be treated by hypnotherapy? *Medical Journal of Australia*, 1, 776-781.
- Davis, L.W., & Husband, R.W. (1931). A study of hypnotic susceptibility in relation to personality traits. *Journal of Abnormal and Social Psychology*, 26, 175-182.
- Egbert, L.D., Battit, G.E., Welch, C.E., & Bartlett, M.K. (1964). Reduction of postoperative pain by encouragement and instruction of patients. *New England Journal of Medicine*, 270, 825-827.
- Evans, C., & Richardson, P.H. (1988). Improved recovery and reduced postoperative stay after therapeutic suggestions during general anaesthesia. *Lancet*, ii, 491-493.
- Ewer, T.C., & Stewart, D.E. (1986). Improvement in bronchial hyper-responsiveness in patients with moderate asthma after treatment with hypnotic technique. *British Medical Journal*, i, 1129-1132.
- Eysenck, H.J., & Furneaux, W.D. (1940). Primary and secondary suggestibility: An experimental and statistical study. *Journal of Experimental Psychology*, 35, 485-503.
- Frankel, F.H. (1987). Significant developments in medical hypnosis during the past 25 years. *The International Journal of Clinical and Experimental Hypnosis*, 4, 231-247.
- Frankel, T. (1974). Use of hypnosis in crisis intervention. *Journal of Clinical and Experimental Hypnosis*, 22, 18-200.
- Friedlander, J.W., & Sarbin, T.R. (1938). The depth of hypnosis. *Journal of Abnormal and Social Psychology*, 33, 153-175.
- Frischholz, E.J. (1985). The relationship among dissociation, hypnosis, and child abuse in the development of multiple personality. In R.P. Kluft (Ed.), *Childhood antecedents of multiple personality*. Washington, DC: American Psychiatric Press.
- Fromm, E., & Nash, M.R. (1992). *Contemporary hypnosis research*. New York: Guilford Press.
- Fromm, E. (1992). An ego-psychological theory of hypnosis. In Fromm, E., & Nash, M.R. (Eds.), *Contemporary hypnosis research*. New York: Guilford Press.

- Fromm, E. (1979). The nature of hypnosis and other altered states of consciousness: An ego-psychological theory. In E. Fromm & R.E. Shor (Eds.), *Hypnosis: Developments in research and new perspectives* (2nd edition). New York: Aldine.
- Gottfredson, D.K. (1973). Hypnosis as an anesthetic in dentistry. Unpublished doctoral dissertation, Brigham Young University.
- H'ajek, P., Jakoubek, B., & Radil, T. (1990). Gradual increase in cutaneous threshold induced by repeated hypnosis of healthy individuals and patients with atopic eczema. *Perceptual and Motor Skills*, 70, 549-550.
- Hilgard, E.R. (1992). Dissociation and theories of hypnosis. In Fromm, E., & Nash, M.R. (Eds.), *Contemporary hypnosis research*. New York: Guilford Press.
- Hilgard, E.R. (1991). A neodissociation interpretation of hypnosis. In S.J. Lynn & J.W. Rhue (Eds.), *Theories of hypnosis: Current models and perspectives*. New York: Guilford Press.
- Hilgard, E.R. (1977). The problem of divided consciousness: A neodissociation interpretation. *Annals of the New York Academy of Science*, 296, 48-59.
- Hilgard, J.R., (1970). *Personality and hypnosis: A study of imaginative involvement*. Chicago: University of Chicago Press.
- Hilgard, E.R. (1965). *Hypnotic Susceptibility*. New York: Harcourt, Brace and World.
- Hull, C.L. (1933). *Hypnosis and suggestibility: An experimental approach*. New York: Appleton-Century Crofts.
- Kirsch, I., & Council, J.R. (1992). Situational and personality correlates of hypnotic responsiveness. In Fromm, E., & Nash, M.R. (Eds.), *Contemporary hypnosis research*. New York: Guilford Press.
- Klein, K.B., & Spiegel, D. (1989). Modulation of gastric acid secretion by hypnosis. *Gastroenterology*, 96, 1383-1387.
- Lynn, S.J., & Sivec, H. (1992). The hypnotizable subject as creative problem-solving agent. In Fromm, E., & Nash, M.R. (Eds.), *Contemporary hypnosis research*. New York: Guilford Press.
- Maher-Loughnan, G.P., MacDonald, N., Mason, A.A., & Fry, L. (1962). Controlled trial of hypnosis in the symptomatic treatment of asthma. *British Medical Journal*, 2, 371-376.

- Morgan, A.H., & Hilgard, J.R. (1978-79a). The Stanford Hypnotic Clinical Scale for adults. *American Journal of Clinical Hypnosis*, 21, 134-147.
- Murphy, A.I., Lehrer, P.M., Karlin, R., Swartzman, L., Hochron, S., & McCann, B. (1989). Hypnotic susceptibility and its relationship to outcome in the behavioral treatment of asthma: Some preliminary data. *Psychological Reports*, 65(2), 691-698.
- Nash, M.R. (1992). Hypnosis, psychopathology, and psychological regression. In Fromm, E., & Nash, M.R. (Eds.), *Contemporary hypnosis research*. New York: Guilford Press.
- Pettinati, H.M., Kogan, L.G., Evans, F.J., Wade, J.H., Horne, R.L., & Staats, J.S. (1990). Hypnotizability of psychiatric inpatients according to two different scales. *American Journal of Psychiatry*, 147, 69-75.
- Roche, S.M., & McConkey, K.M. (1990). Absorption: Nature, assessment, and correlates. *Journal of Personality and Social Psychology*, 59, 91-101.
- Schafer, D.W. (1975). Hypnosis use on a burn unit. *International Journal of Clinical and Experimental Hypnosis*, 23, 1-14.
- Shames, V.A., & Bowers, P.G. (1992). Hypnosis and creativity. In Fromm, E., & Nash, M.R. (Eds.), *Contemporary hypnosis research*. New York: Guilford Press.
- Shertzer, C.L., & Lookingbill, D.P. (1987). Effects of relaxation therapy and hypnotizability in chronic urticaria. *Archives of Dermatology*, 123, 913-916.
- Shor, R.E., & Orne, E.C. (1962). *Harvard Group Scale of Hypnotic Susceptibility, Form A*. Palo Alto, CA: Consulting Psychologists Press.
- Sinclair-Gieben, A.H.C., & Chalmers, D. (1959). Evaluation of treatment of warts by hypnosis. *Lancet*, October 3, 480-482.
- Smith, L., Wain, H.J., & Evans, R. (1981). Hypnotic intervention in the asthmatic response to methacholine: An analysis of the importance of hypnotic capacity and individualized strategies in hypnosis. *Journal of Allergy and Clinical Immunology*, 68, 45.
- Spiegel, D. (1991). Uses of hypnosis in managing medical symptoms. *Psychiatric Medicine*, 9, 521-533.

- Spiegel, D., Detrick, K., & Frischholz, E. (1982). Hypnotizability and psychopathology. *American Journal of Psychiatry*, 136, 777-781.
- Spiegel, D., Hunt, T., & Dondershine, H.E. (1988). Dissociation and hypnotizability in posttraumatic stress disorder. *American Journal of Psychiatry*, 145, 301-305.
- Spiegel, H. (1977). The hypnotic induction profile (HIP): A review of its development. *Annals of the New York Academy of Sciences*, 296, 129-142.
- Spiegel, H. (1973). *Manual for Hypnotic Induction Profile: Eye-Roll Levitation Method*, rev ed. New York: Soni Medica.
- Spiegel, H. (1972). An eye-roll test for hypnotizability. *American Journal of Clinical Hypnosis*, 15, 25-28.
- Spiegel, H. (1970). *Manual for Hypnotic Induction Profile: Eye-Roll Levitation Method*. New York: Soni Medica.
- Spiegel, H., & Shainess, N.I. (1972). Operational spectrum of psychotherapeutic process. *Archives of General Psychiatry*, 9, 477-488.
- Spiegel, H., & Spiegel, D. (1978) *Trance and treatment: Clinical uses of hypnosis*. New York: Basic Books.
- Spiegel, D., & Cardena, E. (1990). New uses of hypnosis in the treatment of posttraumatic stress disorder. *Journal of Clinical Psychiatry*, 51, 39-43.
- Stern, D.B., Spiegel, H., & Nee, J.D. (1979). The hypnotic induction profile: Normative observations, reliability and validity. *The American Journal of Clinical Hypnosis*, 21, 109-133.
- Surman, O.S., Gottlieb, S.K., Hackett, T.P., & Silverber, E.L. (1973). Hypnosis in the treatment of warts. *Archives of General Psychiatry*, 28, 439-441.
- Tellegen, A. (1987). Discussion of symposium: Hypnosis and absorption. Paper presented at the annual meeting of the Society for Clinical and Experimental Hypnosis, Los Angeles.
- Tellegen, A., & Atkinson, G. (1974). Openness to absorbing and self-altering experiences ("absorption"), a trait related to hypnotic susceptibility. *Journal of Abnormal Psychology*, 83, 268-277.

- Ullman, M., & Dudek, S. (1960). On the psyche and warts: II. Hypnotic suggestion warts. *Psychosomatic Medicine*, 22, 68-76.
- van Dyck, R., Zitman, F.G., Linssen, A.C., & Spinhoven, P. (1991). Autogenic training and future oriented hypnotic imagery in the treatment of tension headache: Outcome and process. *International Journal of Clinical and Experimental Hypnosis*, 37, 1-5.
- Wadden, T.A., & Anderton, C.H. (1982). The clinical use of hypnosis. *Psychological Bulletin*, 91, 215-243.
- Wain, H.J. (1993). Medical hypnosis. In A. Stoudemire & B. Fogel (Eds.), *Medical psychiatric practice*, Vol 2. Washington D.C.: American Psychiatric Press.
- Wain, H.J. (1992). Pain as a biopsychosocial entity and its significance for treatment with hypnosis. *Psychiatric medicine*, 10, 101-117.
- Wain, H.J. (1986). Pain control with hypnosis in consultation liaison psychiatry. *Psychiatric Annals*, 16, 106-109.
- Wain, H.J. (1980). Pain control through use of hypnosis. *American Journal of Clinical Hypnosis*, 23, 41-46.
- Wain, H.J. (1979). Hypnosis in a consultation liaison psychiatry service. *Psychosomatics*, 20, 678-689.
- Wain, H.J. (1976). The use of hypnosis in a pain clinic. Presented to the International Conference of Psychosomatic Medicine and Hypnosis, Philadelphia, Pennsylvania.
- Wain, H.J., Schwetschenau R., Schewettman R., & Zwerin, M. (1974). Development of a pain clinic. Walter Reed Army Medical Center Pain Clinic, Washington, D.C. Unpublished Manuscript.
- Wain, H.J., & Jaccard, T. (1994). Coming home: Psychiatric intervention with medical-surgical patients at WRAMC during desert shield/storm. In R. Ursano (Ed.), *Those left behind and those who returned: Psychological responses to war*. Washington D.C.: American Psychiatric Press (in press).
- Wain, H.J., Sandman, L., Radcliffe, E., & Rothberg, J. (1992). The relationship between hypnotic capacity and dissociative experience. Presented at the International Conference of Psychosomatic Medicine and Hypnosis, Jerusalem, Israel.

- Wain, H.J., & Amen, D. (1986). Emergency room use of hypnosis. *General Hospital Psychiatry*, 8, 19-22.
- Wain, H.J., Smith, L., & Evans, R. (1981). The effect of hypnosis on bronchial response to methacholine. *Journal of Allergy and Clinical Immunology*, 68, 44.
- Wakeman, R.J., & Kaplan, J.Z. (1978). An experimental study of hypnosis in painful burns. *American Journal of Clinical Hypnosis*, 21, 3-11.
- Watkins, J.G. (1949). *Hypnotherapy of war neuroses. A clinical psychological handbook*. New York: W.I. Ronald Press.
- Weitzenhoffer, A.M., & Hilgard, E.R. (1962). *Stanford Hypnotic Susceptibility Scale, Form C*. Palo Alto, CA: Consulting Psychologists Press.
- Weitzenhoffer, A.M., & Hilgard, E.R. (1959). *Stanford Hypnotic Susceptibility Scale, Form A and B*. Palo Alto, CA: Consulting Psychologists Press.
- White, M.M. (1950). The physical and mental traits of individual susceptibility to hypnosis. *Journal of Abnormal and Social Psychology*, 25, 293-398.
- Whorwell, P.J., Prior, A., & Faragher, E.B. (1984). Controlled trial of hypnotherapy in the treatment of severe refractory irritable bowel syndrome. *Lancet* ii, 1232-1234.
- Wilson, S.C., & Barber, T.X. (1983). The fantasy-prone personality. Implications for understanding imagery, hypnosis, and parapsychological phenomena. In A.A. Sheikh (Ed.), *Imagery: Current theory, research, and application*. New York: Wiley.
- Wilson, S.C., & Barber, T.X. (1981). Vivid fantasy and hallucinatory abilities in the life histories of excellent hypnotic subjects ("somnambules"): Preliminary report with female subjects. In E. Klinger (Ed.), *Imagery: Vol. 2 Concepts, results, and applications*. New York: Plenum Press.